MR. CHAIRMAN : Next Question No. 344. Mr. Mukhtiar Singh Malik.

Development of computer by I.I.T, *for* Indian languages

*344. SHRI MUKHTIAR SINGH MALIK : Will the PRIME MINISTER be plesed to state :

(a) whether Government's atten tion has been drawn to the news item which appeared in the 'Financial Fxprtss' of the 30th October, 1985 ' the effect that the Indian Institute i Technology has developed a com-titer for Indian Languages;

(b) if so, what are the details in this regard; and

(c) by when it is likely to be commercialised ?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND IN THE DEPARTMENTS OF OCEAN DEVELOPMENT, ATOMIC ENERGY, ELECTRONICS AND SPACE (SHRI SHIVRAJ PATIL) : (a) to (c) A Statement is laid on the Table of the Rajya Sabha.

Statement

(a) Yes, Sir.

(b) The details of the System are given beiow :

Indian Institute of Technology, Madras hag developed a computer system which can provide captions and sub-titles in English, Hindi and Tamil. The specially designed dual computer hardware and companion software produce characters in the desired script, colour and size. The mixed test (in 3 scripts) may be edited and stored on the floppy disc. All known computer operations can be carried out on this multilingual text and the resulting computer/TV net-work system can be used for captions, messages, teletext, sub-titles on electronically recorded programmes (VCR films), animation, educational programme etc. The system produces TV studio compatible (locked to TV studio sync) text in desired script, colour and size from the same keyboard and which may also be used for subtitling of films in Indian languages and produce animation for educational TV programmes.

Salient features of this computer system include operation in networked environment, multiple, languages from the same keyboard foreground and background colour control, size control, musical tones, real time display, colour graphics, cue sheet printing (mixed text in three languages), special and dynamic effects, window generation for titles etc.

(c) In view of certain limitations in the performance of this system and the long time frame involved in developing a professional grade system meeting specification of Doordarshan, it is difficult to say anything at this stage as to when this would be comm* cialised.

SHRI MUKHTIAR SINGH MALIK : Mr. Chairman, Sir, every body knows that the computers had been developed in foreign languages like German, French, Russian, English, etc. But no computer had been developed in Indian languages. Therefore, we have to compliment the efforts of our technocrats especially in I.I.T. Madras. This goes to prove sir, that we are making great progress in the field of science and technology as claimed by our Honourable Prime Minister.

I would like to ask the Honourable Minister : what shall be the memory storage capacity of this computer ? What kind of software has been developed or is being developed for the computer ?

SHRI SHIVRAJ PATIL : Sir, this is a computer device invente d *by*

the Scitntists in I.I.T. Madras for Indian languages—Hindi, Telugu, English.. .

SOME HONOURABLE MEMBERS : Tamil language also.

SHRI SHIVRAJ PATIL : Yes, Tamil language also. Sir, an attempt ia being made to invent the instruments which can be used in other languages. For Marathi language also it can be used.

SHRI JAGESH DESAI : What about Gujarati ?

SHRI SHIVRAJ PATIL : Yei. all the scheduled languages.

Sir, this device is being used by the Doordarshan Kendra, Madras also. But it is done only on an experimental basis. It has not yet accom-plishfd the professional grade. Sir, some more work has to be done on it, before it is used on a large scale.

MR. CHAIRMAN : Second supplementary.

SHRI MUKHTIAR SINGH MALIK : Mr. Cl.aiiman, Sir, in view of the reply given by thr Honourable Minister in part (c) of the statement that there are certain limitations in the performance of this computer. So it would be difficult to say at this stage as to when it shall be commercialised. Therfore, I would like to ask the Honourable Minister : what would be the losses incurred till the time it takes to be commercialised ? The Minister has not fixed any target for this. He has said that he cannot say definitely as to by what time it is likely to be commercialised. I would also like to as him as to when these limitations are likely to be crossed over ?

SHRI SHIVRAJ PATIL : Sir, foi this device they are using Do-tematrix. Because of that the characters are not very pronounced; and they are also not legible. They cannot be seen properly. In fact, in the professional gadget device the piclue cell mode is used. They call it as 'pig cell' . They have used that word 'piline cell'. Sir, because of that the characters are not very pronounced.

At present the Doordarshan Kendra is using four such, devices; and the Doordarshan needs about 30 devices. This is the only requirem(nt of the Doordarshan.

As far as the hardware is concerned the number of instruments required is very limited.

As far as the software for using the Indian Languages is concerned, it has to be developed but before it is developed perfectly, professionally and before the professional grade is achieved, it will be difficult to use it for the consumers and the people for whom it is to be used may not like it. It is not 'possible for me to give the amount of money involved in it.

DR. LOKESH CHANDRA Mr. Chairman, Sir, the *Lipi* developed by the I.I.T., Madras takes three scripts, but as the Minister has rightly pointed out causes a tremendous strain on the eyes . When its demonstration was held in Delhi, I had asked specifically whether they would go into the aesthetics of the script which is not easily readables at present. So far as I could understand from that demonstration, they are not as concerned with the development of the piinter, as with the development of die computer itself. The software does not take into account the eyes of the user. So, will the Mmister assure the House that whenever these computers are developed, print-outs are of such quality that one's eye-seight does not go down every time, one reads ten or twenty pages ?

SHRI SHIVRAJ PATIL : Sir, it is our aim to produce the things which are legible and which are attractive also.

SHRI VISHWA BANDHU GUPTA : Sir, I would like to know from the Minister whether the computer which has been developed" would be compatible with other I systems like. I.B.M. and so on ? There are softwares which could be used on this computer and a specific printer, the kind of printer that they have, the Minister has said that it is Dot Matrix, bul what kind of a Matrix they are using ?

SHRI SHIVRAJ PATIL : The system which we are using is Dote Matrix and this system is not compatible or as good as the systems which are available commercially in the market today. As far as software is concerned, it has to be developed in the country because nobody is going to develop software for the Indian Languages or the Scheduled Languages.

*345- (^ *questioner (Shri Shanti Tyagi) was absent for answer vide cols.* 41—43 *infra)*

♦346. *[The questioners (Shrimati Usha Malhotra and Shri Nand Kishore Bhatt) were absent. For answer, vide Cols.* 43—45 *illfra')*

Technically qualified manpower in computers and electronics

*347. SHRI T. CHANDRA-SEKHAR REDDY ; Will the PRIME MINISTER be pleased to state :

(a) whether the Central Government have called upon the State Governments and the Union Territory administrations for crash programme for making available technically qualified man-power in the fields of computers and electronics;

(b) if so, what are the details in this regard;

(c) what is the amount earmarked in the Seventh Five Year Plan for the electronics industry;

(d) what is the technically qualified man-power in the fields of computerised electronics which is available at present and will be needed by the end of the Seventh Five Year Plan; and

(e) what steps Government are taking to give technical training to the personnel in this field ?

THE MINISTER OF STATE IN MINISTRY OF SCIENCE AND TECHNOLOGY AND IN THE DEPARTMENTS OF OCEAN DEVELOPMENT, ATOMIC ENERGY, ELECTRONICS AND SPACE (SHRI SHIVRAJ PATIL) : (a) to (e) A Statement is laid on the Table of Rajya Sabha.

Statement

(a) Yes, Sir.

(b) Keeping in view the targetted production of about Rs. 10,000 crores during the terminal year of the Seventh Five Year Plan and recognising the fact that investment on technology etc. inducted for electronics can bring about the desired results only if adequate trained manpower is available, Department of Electronics had identified various programmes for development of manpower. These include : (i) Manpower Development programme : (ii) programmes relating to application of electronics in education: and (iii) those relating to manpower development specifically in computer and related area. Education in general, and technical education in particular, being mostly the responsibility of State Governments and to some extent that of the Union Ministries of Human Resources Developmen* and Labour, the responsibility for implementation or the various programmes rests with these agencies. In order that these programmes, as worked out by Department of Electronics, for the Seventh Five Year Plan, are discussed among these agencies and an implementation plan